

a reduplicated shade-line running through them. *Abdomen* brownish grey, white posteriorly. *Legs* whitish, with some black bands.

Type, ♂ (60364) Mus. Wlsm.

Hab. COREA—Gensan, VI. 1886 (*Leech*). Unique.

In appearance this species is intermediate between *Hysterosia amandana*, H.-S., which has a white thorax and a costal fold, and *Phtheochroa pulvillana*, H.-S., which has a black thorax and no costal fold; except by its black thorax, it is also undistinguishable from the Japanese *albiscutellum*, Wlsm., of which unfortunately the male is not known, but this is a much larger species than *amandana*.

LVII.—*Descriptions of some Species of Coccidæ collected by Mr. James Lidgett in Victoria, Australia.* By E. ERNEST GREEN, F.E.S., Government Entomologist, Ceylon.

[Plate XI.]

MR. E. E. GREEN has sent to the British Museum some specimens of Coccidæ new to the collection, and with them the following descriptions and figures, which I have much pleasure in sending to the 'Annals' for publication.

CHAS. O. WATERHOUSE, V.P.E.S.

Mytilaspis indentata, sp. n. (Pl. XI. fig. 1.)

Female puparium brownish straw-colour, the sides and hinder part darker, with a very narrow whitish margin. First pellicle very pale yellow. Second pellicle almost colourless. Strongly convex above. Elongate, rather narrow, but widening slightly behind the exuviae; usually much curved or contorted, as in *M. intermedia*, Mask. (Trans. N. Z. Inst. 1890, p. 7). Ventral scale moderately developed. Length about 2 millim.

Male puparium not observed.

Adult female of usual elongate form, broadest across the basal abdominal segments. Antenna consisting of the usual small tubercle and curved bristle. Mouth-parts large and conspicuous. Parastigmatic glands absent or represented only by a single pore at the anterior spiracles. Abdominal segments with groups of oval pores and short cylindrical ducts on the lateral margins. Pygidium (Pl. XI. fig. 1) deltoid,

the margin deeply indented at the junctions of the suppressed segments, these indentations made more conspicuous by a thick chitinous rim. Median lobes minute and inconspicuous. First lateral lobes undivided, large and broad but not very prominent, the free margin evenly curved, the sides straight. Other lobes obsolete. Margin on each side strongly chitinous and serrated. There are no squames and only two small spines are noticeable on each side immediately laterad of the large second lobes. No circumgenital glands. Anal at about same level as genital aperture, near centre of pygidium. Dorsal pores few, but strongly marked by thickened chitinous rims.

Total length of insect averaging 1.50 millim.

Hab. On an unidentified plant collected at Werribee Gorge, Bacchus Marsh, Victoria, Australia. (Lidgett Coll. no. 47.)

A very distinct species, easily recognizable by the minute median lobes followed by the large simple lateral lobes, and by the absence of circumgenital glands. The only other Australian species of *Mytilaspis* with this character are *M. convexa*, Mask., and *M. drymidis*, Mask. In *convexa* the puparium is greyish white and the second pellicle is so much raised that its posterior edge forms a conspicuous ridge over the secreted portion. The pygidium is also said to have broad median lobes, though (from an examination of the figure) it seems possible that these may really represent the lateral lobes as in *indentata*. *M. drymidis* is easily distinguished by the remarkable fringed tubular processes on the margin.

Ctenochiton (?) *araucariæ*, sp. n. (Pl. XI. figs. 2, 2 a.)

Adult female oblong-oval; strongly convex above; naked, or with a very imperfect coating of irregular waxy plates which appear to be brittle and easily detachable. Colour of dried examples dark chestnut-brown; the dorsal surface strongly rugose, usually with a well-defined median longitudinal ridge. Antenna (fig. 2) with eight joints, third longest, 6, 7, and 8 very short, subequal. The terminal joint bears several stout spines. Antennal formula—3, 4, (2, 5), 1, (6, 7, 8). Legs stout; tarsus equal to about two thirds length of tibia. Foot with four digitules, the unguis broadly spatulate, the tarsals stoutish knobbed hairs. Anal scales usually widely divergent; base shorter than outer edge, which is rounded and bears a few truncate spines. Anal ring with six stout hairs; the invaginated tube which surrounds them strongly rugose. Margin closely set with

moderately long stout spines, their extremities truncate. Stigmatic cleft shallow, with three or four stout pointed stigmatic spines, one or more of which are longer and curved (fig. 2 a). Derm with small and rather obscure circular and oval pores, more conspicuous towards the margin. Numerous small circular pores (circumgenital glands) surrounding the genital aperture, and a group of similar pores (parastigmatic glands) below the stigmatic cleft.

Length 5 millim.; breadth $3-3\frac{1}{2}$ millim.

On the twigs bearing the adult females are some very imperfect empty and crushed tests, which may represent either the second stage of the female or the male puparia. They are composed of granules or small irregular plates of transparent waxy matter.

Hab. On *Araucaria* sp., Victoria, Australia. (Lidgett Coll. no. 50.)

I have considerable difficulty in determining the proper genus in which to place this species. The structural characters of the insect itself suggest *Eriochiton*; but the female forms no felted or cottony covering—in fact, the adult female, as submitted to me, is practically naked, bearing only scattered fragmentary patches of glassy wax. The complete marginal series of stout spines distinguishes it from *Lecanium*.

Although I can find no vestige of a marginal fringe of flattened waxy plates, I have provisionally attached this insect to Maskell's genus *Ctenochiton*, to which in other respects it conforms fairly well. In *Cten. depressus*, Mask., the fringe is said to be "inconspicuous or sometimes absent" in the adult female.

BIRCHIPPIA, gen. nov.

Test of adult female completely enclosing the insect, with a small aperture at posterior extremity.

Male puparium with a well-defined circular valve at hinder end, through which the adult insect makes its escape.

Adult female shrivelling to anterior extremity after gestation, the hinder part of the test being filled with the eggs. Legs absent. Antennæ more or less rudimentary. Mentum monomerous. Stigmatic spines present. Posterior extremity cleft. Anal aperture surrounded by chitinous plates, which do not meet to form a valve as in typical Lecaniinæ. Anal ring with ten hairs.

Adult male unknown.

Larva with 6-jointed antennæ; the terminal joint long. Legs normal. Anal plates as in adult; anal ring with six

hairs. Posterior extremity of body with a pair of long caudal setæ, not springing from the anal plates.

Having only a single species with which to deal, it is difficult and inadvisable to define the generic characters very minutely.

I have still further difficulty in determining the proper systematic position of the new genus. It has some characters (stigmatic spines, anal cleft, &c.) which associate it with the Lecaniinæ, others which suggest Dactylopiinæ, but not such as would warrant its inclusion in the intermediate family Hemicoccinæ, where the larvæ are Dactylopiinid and the adults Lecaniinid. I think that the Lecanoid characters have here the predominance, the principal differences being the non-valvular anal plates and the marginal position of the caudal setæ.

The name of the genus is taken from that of the locality in which the specimens were collected.

Birchippia anomala, sp. n. (Pl. XI. figs. 3-3 d.)

Test of adult female corneous, semitransparent, fulvous, more or less obscured by a fragmentary coating of brownish waxy matter. The dark body of the dead insect can be distinguished through the test at the anterior extremity. Broadly oval to oblong-oval according to position. Strongly convex above, smooth. A small circular opening at the posterior extremity.

Length 3-4 millim.; breadth 2 millim.

Male puparium whitish, opaque. Rather broadly oval, with a circular valve-like opening at posterior extremity. Moderately convex above, more so above the abdominal area. Surface marked by numerous transverse depressed lines and usually four longitudinal furrows; the area between the two median furrows standing up as a rounded ridge. The general character of the puparium is strongly suggestive of that of a male Lecanodiaspid.

Length 1.25 millim.; breadth 0.75 millim.

Adult female (fig. 3) shrivelling to anterior part of test, subcircular (after maceration). Posterior extremity cleft. Mentum monomeric. Antenna (fig. 3 a) atrophied, varying in development in different individuals. In some examples a distinct basal and a compound terminal joint only can be distinguished. In others at least three distinct joints are present, the median as long as the other two combined. The terminal joint has two or more imperfect divisions and bears six or seven stout bristles at its extremity. On the margin,

opposite the stigmatic areas, are some stout dilated blunt spines, flattened towards the ends (fig. 3 *b*), two (rarely three) at anterior point, one (rarely two) at the other point, placed on dorsal surface. On the ventral surface is an extended group of ceriferous pores, directed towards the opening of the spiracle. Derm with a large number of bituberculate spinnerets scattered over the surface and forming a more or less continuous series on the margin. They are connected with some remarkable tubular ducts, each terminating in a lateral finger-like process. The connexion between the external spinneret and the tubular duct is very indistinct; but it can be made out by careful illumination (see figs. 3 *b* and 3 *c*). Anal aperture at base of cleft, surrounded dorsally by four more or less confluent triangular chitinous plates (fig. 3 *c*), the lower pair largest, with two stout spines near the apex of each; these plates do not meet to form a valve, as in typical Lecaniinæ. Anal ring with ten stout flattened hairs projecting into the cleft. Margin of body with a scattered series of short spines, which increase in size near the anal cleft.

Diameter 1·50–1·75 millim.

Newly hatched larva oval. Antenna 6-jointed, sixth longest; extremity abruptly narrowed and truncate, bearing a longish fine hair. Anterior stigmatic area with two, posterior with one stout spine. Anal aperture (fig. 3 *d*) surrounded by chitinous plates as in adult. A long stout seta on each side of the cleft, not attached to the chitinous plates, but springing from a minute tubercle on the margin of the body.

Hab. "On a small Leguminous shrub, collected at Birchip, Victoria." (Lidgett Coll. no. 49.)

The scales are thickly clustered on the twigs of the plant.

Peradeniya, Ceylon,
24th May, 1900.

EXPLANATION OF PLATE XI.

- Fig. 1.* *Mytilaspis indentata*. Pygidium.
Fig. 2. *Ctenochiton araucariae*. Antenna of female.
Fig. 2 a. Ditto. Stigmatic area of adult female.
Fig. 3. *Birchippia anomala*. Adult female, ventral view.
Fig. 3 a. Ditto. Antenna of adult female.
Fig. 3 b. Ditto. Anterior stigmatic area of adult female.
Fig. 3 c. Ditto. Extremity of abdomen, dorsal aspect.
Fig. 3 d. Ditto. Posterior extremity of young larva.